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98 San Jacinto Boulevard, Suite 1100 • Austin, Texas 78701-4255  
*shighlander@fulbright.com • Direct: 512 536 3184 • Main: 512 474 5201 • Facsimile: 512 536 4598*

August 10, 2011

**BY OVERNIGHT DELIVERY**

Jan Horbaly, Clerk  
U.S. Court of Appeals for the Federal Circuit  
717 Madison Place, N.W., Room 401  
Washington, DC 20439

Re: Serial Number 10/082,772 Entitled "SEQUENCE-SPECIFIC DNA RECOMBINATION  
IN EUKARYOTIC CELLS" By Peter Droge et al. (Client Ref. DRO-001 PCT/US)  
Our Ref. No. DEBE:008US


Dear Mr. Horbaly:

Enclosed are three copies of a Notice of Appeal together with the fee prescribed by Rule 52 (a)(3)(A) of the Rules of the Federal Circuit.

Please file these documents among the papers of the Court and return a file-marked copies to my office via the enclosed self-addressed envelope.

Please do not hesitate to contact me with any questions.

Very truly yours,

  
Steven L. Highlander

SLH/cpj

Encl.: Notice of Appeal

cc: The United States Patent and Trademark Office (w/encl.) via Express Mail

PATENT  
Customer No. 32425

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*In re* Application of:

Peter DROGE, Nicole CHRIST and  
Elke LORBACH

Serial No.: 10/082,772

Filed: February 22, 2002

For: SEQUENCE-SPECIFIC DNA RECOMBI-  
NATION IN EUKARYOTIC CELLS

Group Art Unit: 1636

Examiner: Q. Nguyen

Atty. Dkt. No.: DEBE:008US/SLH

Confirmation No.: 4391

Office of the General Counsel  
U.S. Patent and Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450


Appeal No.: 2010-003660

**NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE  
FEDERAL CIRCUIT**

Applicants, Peter Droge, Nicole Christ, and Elke Lorbach, hereby serve notice under 35 U.S.C. §141 and 142 of its appeal to the U.S. Court of Appeals for the Federal Circuit from the decision of the Board of Patent Appeals and Interferences dated June 14, 2011. Simultaneously herewith, three copies of this notice of appeal together with the fee prescribed by Rule 52

(a)(3)(A) of the Rules of the Federal Circuit are being transmitted to the Clerk of the Federal Circuit.

Respectfully submitted,



Steven L. Highlander  
Reg. No. 37,642

Date: August 10, 2011

Fulbright & Jaworski L.L.P.  
98 San Jacinto Boulevard., Suite 1100  
Austin TX 78701  
512-474-5201

## VIII. APPENDIX A – APPEALED CLAIMS

29. A method of sequence specific recombination of DNA in a eukaryotic cell, comprising:
- (a) providing said eukaryotic cell, said cell comprising a first DNA segment integrated into the genome of said cell, said first DNA segment comprising an *attB* sequence according to SEQ ID NO:1 or a derivative thereof, an *attP* sequence according to SEQ ID NO:2 or a derivative thereof, an *attL* sequence according to SEQ ID NO:3 or a derivative thereof, or an *attR* sequence according to SEQ ID NO:4 or a derivative thereof;
  - (b) introducing a second DNA segment into said cell, wherein if said first DNA segment comprises an *attB* sequence according to SEQ ID NO:1 or a derivative thereof, said second DNA segment comprises an *attP* sequence according to SEQ ID NO:2 or a derivative thereof, wherein if said first DNA segment comprises an *attP* sequence according to SEQ ID NO:2 or a derivative thereof, said second DNA segment comprises an *attB* sequence according to SEQ ID NO:1 or a derivative thereof, wherein if said first DNA segment comprises an *attL* sequence according to SEQ ID NO:3 or a derivative thereof said second DNA segment comprises an *attR* sequence according to SEQ ID NO:4 or a derivative thereof, or wherein if said first DNA segment comprises an *attR* sequence according to SEQ ID NO:4 or a derivative thereof said second DNA segment comprises an *attL* sequence according to SEQ ID NO:3 or a derivative thereof; and
  - (c) further comprising providing to said cell a modified bacteriophage *lambda* integrase Int, wherein said modified Int is Int-h or Int-h/218, which induces sequence specific recombination through said *attB* and *attP* or *attR* and *attL* sequences.
30. The method of claim 29, wherein said first DNA segment was introduced into the genome of said cell by recombinant methods.
32. The method of claim 29, wherein said first DNA segment comprises an *attB* sequence

- according to SEQ ID NO:1 or a derivative thereof, and said second DNA comprises an *attP* sequence according to SEQ ID NO:2 or a derivative thereof.
33. The method of claim 29, wherein said first DNA segment comprises an *attP* sequence according to SEQ ID NO:2 or a derivative thereof, and said second DNA comprises an *attB* sequence according to SEQ ID NO:1 or a derivative thereof.
  34. The method of claim 29, wherein said first DNA segment comprises an *attL* sequence according to SEQ ID NO:3 or a derivative thereof, and said second DNA sequence comprises an *attR* sequence according to SEQ ID NO:4 or a derivative thereof, further comprising, in step (d), providing to said cell a Xis factor.
  35. The method of claim 29, wherein said first DNA segment comprises an *attR* sequence according to SEQ ID NO:4 or a derivative thereof, and said second DNA sequence comprises an *attL* sequence according to SEQ ID NO:3 or a derivative thereof, further comprising, in step (d), providing to said cell a Xis factor.
  36. The method of claim 29, further comprising providing to said cell a third DNA segment comprising an Int gene.
  37. The method of claim 36, further comprising providing to said cell a fourth DNA segment comprising a Xis factor gene, respectively.
  38. The method of claim 36, wherein said third DNA segment further comprises a regulatory sequence effecting a spatial and/or temporal expression of the Int gene.
  39. The method of claim 37, wherein said fourth DNA segment further comprises a regulatory sequence effecting a spatial and/or temporal expression of the Xis factor gene.
  43. The method according to claim 29, wherein said first and/or second DNA segment further comprise a sequence effecting integration of said first and/or second DNA segment into the genome of said cell by homologous recombination.
  44. The method of claim 29, wherein said first and/or second DNA segment further comprises a sequence coding for a polypeptide of interest.

45. The method of claim 44, wherein said polypeptide of interest is a structural protein, an endogenous or exogenous enzyme, a regulatory protein or a marker protein.
46. The method of claim 29, wherein said first and second DNA segment are introduced into the eukaryotic cell on the same DNA molecule.
47. The method of claim 29, wherein said eukaryotic cell is a mammalian cell.
48. The method of claim 47, wherein said mammalian cell is a human, simian, mouse, rat, rabbit, hamster, goat, bovine, sheep or pig cell.
49. The method of claim 29, further comprising:
  - (d) performing a second sequence specific recombination of DNA by Int-h or Int-h/218 and a Xis factor after the steps (a)-(c), wherein said first DNA sequence comprises said *attB* sequence according to SEQ ID NO:1 or a derivative thereof and said second DNA sequence comprises the *attP* sequence according to SEQ ID NO:2 or a derivative thereof, or wherein said first DNA sequence comprises said *attP* sequence according to SEQ ID NO:2 or a derivative thereof and said second DNA sequence comprises the *attB* sequence according to SEQ ID NO:1 or a derivative thereof.
50. The method of claim 49, further introducing a further DNA sequence into said cells, the further DNA sequence comprising a Xis factor gene.
51. The method of claim 50, wherein said further DNA sequence comprises further a regulatory DNA sequence effecting a spatial and/or temporal expression of said Xis factor gene.
58. An isolated eukaryotic cell obtainable according to the method of claim 29.

## **IX. APPENDIX B – EVIDENCE CITED**

Exhibit 1 – Crouzet *et al.*

Exhibit 2 – Christ & Dröge *et al.*

Exhibit 3 – Capecchi *et al.*

Exhibit 4 – Hartley *et al.*

Exhibit 5 – Lange-Gustafson *et al.*

Exhibit 6 – Declaration of Peter Dröge

Exhibit 7 – Calos *et al.*

**X. APPENDIX C – RELATED PROCEEDINGS**

None

